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One of the most famous mathematical problems concerns constructing figures with an unmarked straightedge and compass, specifically regular polygons. Such construction problems concerning regular  $n$ -gons can be generalized to consider the  $n$ -division points of any closed curve  $C$  ( $n$  points dividing  $C$  into pieces of equal arc length).

Here, we will discuss two theorems we proved concerning the constructible  $n$ -division points of a family of closed hypotrochoids called the hypocycloids. These theorems and their proofs will provide insight into 2 major problems in this field: characterizing the constructible  $n$ -division points of families of curves and understanding the difference in the constructible  $n$ -division points of a closed curve  $C$  depending on whether  $C$  is drawn or not.

We will show that the  $n$ -division points of all rational hypocycloids are constructible with a straightedge and compass for all integers  $n$ , given a pre-drawn hypocycloid. We will also consider the problem of constructibility of  $n$ -division points of hypocycloids without a drawn curve. Here, we will examine the hypocycloid with 3 cusps and prove that only the 1, 2, 3, and 6-division points of an undrawn tricuspoid are constructible in this manner. (Received August 26, 2015)